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SYSTEM AND METHOD FOR SHARING INFORMATION AMONG PROVIDER SYSTEMS

Related Application

This application claims priority under 35 U.S.C. §119(e) to commonly-owned, co-pending U.S. Provisional Patent Application Serial No. 60/225,127 entitled, "System And Method For Sharing Information Among Provider Systems," filed August 14, 2000, which is hereby incorporated by reference in it's entirety.

Field of the Invention

The invention relates generally to application programming, and more specifically, to storing user information in a central server that distributes the information to provider systems.

Background of the Invention

Transactions using public and private networks have become commonplace. A transaction is generally performed by entities known as providers and consumers. A provider is generally an entity, such as a computer system that provides one or more products or services to consumers. A consumer may also be a computer system, operated by a user who is the consumer of such goods or services. These transactions may be, for example, a personal transaction such as buying a product or service over the Internet, or may be a business-to-business transaction performed over one or more public or private networks. These providers and consumers typically connect to the network and conduct transactions by sending and receiving messages using a communication protocol, such as the well-known TCP/IP communication protocol.

Consumers currently conduct transactions over networks such as the Internet. These transactions are commonly referred to as electronic commerce transactions, also known as "e-business" or "e-commerce transactions." Individual entities, such as companies, commonly use the Internet to conduct regular business transactions, including advertising their products to customers and processing transactions. Transaction information is generally stored at the company location or on the company system. If the person chooses to conduct business with another company, that person is generally required to enter his or her information with that company as well.

Transactions are typically performed using an application referred to as a browser, such as the Microsoft Explorer or Netscape browsers. A browser communicates to users through HTTP servers (or "Web servers") using the well-known HTTP transfer protocol. In this case, a browser displays an interface provided by the HTTP server, and the user provides information, such as identification information (name, address, phone, etc.), financial information (credit card number, expiration, name, etc.), or other information to conduct a transaction. The interface may be, for example, an HTML interface as known in the art, and the user may enter information into one or more fields of an HTML page. This information is then transferred to the server, wherein the information is processed and/or stored by a program executing at the server. The program may be, for example, a script, executable, or other type of program written in one or more programming languages, such as JavaScript, Java, Perl, cgi scripts, or the like. The information may be stored in a database, such as a relational, object, file system or other type of database known in the art. Other methods for transferring information between a server and client may be used, such as by implementing remote objects using Common Object Request Broker Architecture (CORBA), among others.

In general, computer systems that function as providers are commonly referred to as "hosts" or "servers," and systems that function as consumers are referred to as "clients." Client-server systems are well-known in the art, and form the basis for conducting transactions over the Internet. Servers generally receive transaction requests from clients and store information relating to those transactions. Server transaction functions are generally limited to the businesses that they support. For example, the site www.bn.com operated by Barnes and Noble bookstores includes servers that perform purchasing transactions with respect to purchasing media such as books, CDs, DVDs, and the like. Such servers generally allow a user to order and review transaction information associated with the transactions supported.

Summary of the Invention

Conventional systems are deficient in that information needed to support transactions needs to be re-entered by a user each time the user accesses a different provider system. That is, users, through computer system interfaces enter the same or similar information into multiple systems. This additional data entry becomes problematic as the number of providers to support a single event is numerous. For example, when reserving a trip online, a user may need to access a plane reservation system, car rental system, hotel reservation system,

restaurant guide, among other systems to support the trip. As each of these provider systems is accessed, the same or similar information needs to be entered, creating additional effort for the user.

According to one aspect of the invention, a system is provided wherein information is provided once, and that information is provided to multiple provider systems. According to one embodiment of the invention, information provided by a user is stored and implemented for each provider as needed. In one embodiment, the information is provided by a user to a central server that distributes the information to one or more provider systems. In particular, the information is stored in a database and distributed to the provider system depending on the type of transaction.

According to another aspect, a subset of the information is operated on as a group, and this subset is provided by a user on that basis. Because information is operated on as a group, related information may be easily transferred from the system to a provider. Also, graphical user interfaces may be adapted that may be reused for different providers, and programming costs are reduced.

According to another aspect, multiple groups of similar information associated with a user may be stored. For example, if the event is a move from one location to another, addresses of each location may be stored and accessed as needed. Also, information for a number of credit or debit cards may be stored and used as needed. Further, predefined knowledge regarding the event may be used to translate the stored information into fields for one or more provider systems. For instance, if a user living in one town moves to another town, the system may be operable to order the correct services in either the first town or the second. In particular, appropriate utility connection or disconnection requests may be issued to the providers of utilities associated with the first and second towns.

According to another aspect of the invention, a convenient information display is provided wherein information is acted on as a group. A key field may be used to manipulate the data as a group. For instance, multiple addresses of a user may be stored and displayed by a key field. For example, the system may display as a key field, the town of each address. The user may, through the interface, select a key field, selecting the entire group. This group of information, for example, may be automatically populated to fields in an entry interface, or automatically be selected as configuration information to support a transaction. Multiple fields are acted on as a group related by the key field. In another aspect of the invention, queries for information are arranged in question groups -- such as those related to billing,

shipping, personal or other information, and displayed to a user in general entry interface. By creating general entry interfaces, specific entry interfaces do not need to be created for different providers, and interface programming costs are reduced.

Also, graphical user interfaces may be adapted that may be reused for different providers, and programming costs are reduced. Further, multiple groups of similar information associated with a user may be stored. For example, if the event is a move from one location to another, addresses of each location may be stored and accessed as needed. Also, information for a number of credit or debit cards may be stored and used as needed. Further, predefined knowledge regarding the event may be used to translate the stored information into fields for the provider system. Further, a convenient information display is provided wherein information is acted on as a group. A key field may be used to manipulate the data as a group. For instance, multiple addresses of a user may be stored and displayed by a key field. For example, the system may display as a key field, the town of each address. The user may, through the interface, select a key field, selecting the entire group. This group of information, for example, may be automatically populated to fields in an entry interface, or automatically be selected as configuration information to support a transaction. Multiple fields are acted on as a group related by the key field. In another aspect of the invention, queries for information are arranged in question groups -- such as those related to billing, shipping, personal or other information, and displayed to a user in general entry interface. By creating general entry interfaces, specific entry interfaces do not need to be created for different providers, and interface programming costs are reduced.

These and other advantages are provided by:

A system for sharing information among provider systems, comprising an interface for receiving information from one or more users to support a plurality of transactions each of which is performed with at least one of a plurality of provider systems; a database in which the received information is stored; and an information manager operable to provide the received information to the plurality of provider systems based upon the transaction performed. According to another embodiment of the invention, the interface is a network interface coupled to a network including one or more clients. According to another embodiment, the database is a relational database (RDBMS). According to another embodiment, the system provides the received information to the plurality of provider systems based upon a mapping between fields of the received information and expected fields of the provider. According to another embodiment, the manager is operable to associate a

plurality of fields of the received information as a group, and perform operations on the group.

A method for sharing information among provider systems, comprising receiving information from one or more users to support a plurality of transactions, each of which is performed with at least one of a plurality of provider systems; storing the information; and providing the received information to the plurality of provider systems based upon the transaction performed. According to another embodiment of the invention, the step of receiving further comprises receiving the information over a communication network. According to another embodiment, the step of storing includes storing the information in a database. According to another embodiment, the method further comprises providing the received information to the plurality of provider systems based upon a mapping between fields of the received information and expected fields of the provider. According to another embodiment, the method further comprises associating a plurality of fields of the received information as a group and performing operations on the group.

A method for creating an online checkout process to enable a user to order from among a plurality of providers. The method comprises the steps of assembling a set of checkout questions from the plurality of providers. The method further comprises the steps of identifying related checkout questions and assigning each set of related checkout questions to a unique checkout object. The method further comprises the steps of determining common checkout objects from providers of a like product or service, and assigning the common checkout objects to the like product or service. The method further comprises the steps of assigning each non-common checkout object to a specific provider with which it is associated, and assembling said checkout process comprising checkout questions, wherein the user is required to complete each question associated with a common object only once when ordering from any provider that offers the like product or service.

An online system enabling transactions between a user and one or more of a plurality of providers. The online system comprises a database that stores objects, each object comprising a unique checkout question or a related set of checkout questions from the plurality of providers, wherein objects that are common to a plurality of providers of a like product or service are assigned to that product or service such that each checkout question associated with a common object is asked of the user only once regardless of a number of providers of the like product or service with which the user may wish to enter into a transaction. The online systems further comprises an interface for receiving information

from the user in response to said questions, and wherein the database further stores the information and provides the information to the one or more of the plurality of providers.

Other advantages, novel features, and objects of the invention will become apparent from the following detailed description of the invention when considered in conjunction with the accompanying drawings, which are schematic and which are not intended to be drawn to scale. In the Figures, each identical, or substantially similar component that is illustrated in various Figures is represented by a single numeral or notation. Additionally, the left-most one or two digits of a reference numeral identifies the drawing in which the reference numeral first appears. For purposes of clarity, not every component is labeled in every Figure, nor is every component of each embodiment of the invention shown where illustration is not necessary to allow those of ordinary skill in the art to understand the invention.

Brief Description of the Drawings

This invention is pointed out with particularity in the appended claims. The above and further advantages of this invention may be better understood by referring to the following description when taken in conjunction with the accompanying drawings in which similar reference numbers indicate the same or similar elements.

In the drawings:

Figure 1 is a block diagram of an environment suitable for performing various aspects of the invention;

Figure 2 is a block diagram of a general purpose computer system;

Figure 3 is a block diagram of a system for managing information among a plurality of systems according to one embodiment of the invention;

Figure 4 is a block diagram of steps taken to assemble an online checkout process according to one embodiment of the invention;

Figure 5 is a block diagram of a series of objects or question groups of interfaces according to one embodiment of the invention;

Figure 6 is a block diagram of an object with several fields and attributes according to one embodiment of the invention;

Figure 7 is a index or home page according to one embodiment of the invention;

Figure 8 is a web page according to one embodiment of the invention;

Figure 9 is a web page according to one embodiment of the invention;

Figure 10 is a web page according to one embodiment of the invention;

Figure 11 is a web page according to one embodiment of the invention;

Figure 12 is a web page according to one embodiment of the invention;

Figure 13 is a web page according to one embodiment of the invention;

Figure 14 is a web page according to one embodiment of the invention;

Figure 15 is a web page according to one embodiment of the invention; and

Figure 16 is a web page according to one embodiment of the invention.

Detailed Description

The present invention will be more completely understood through the following detailed description which should be read in conjunction with the attached drawings in which similar reference numbers indicate similar structures. All references cited herein are hereby expressly incorporated by reference.

It should be understood that e-commerce transactions may be performed between any entities, whether they are individuals or companies. The term "company" will be used synonymously with "provider" or "individual" providing goods or services; the company, provider or individual may be any entity providing goods or services. The terms "customer," "consumer," "person," and "user" will also be used interchangeably as an entity that shops for, purchases and/or receives goods or services. The term "online" refers to a transaction or communication in a computer network environment such as the world wide web.

Also, it should be understood that questions that are common among providers to a service or a product are referred to as service-specific or product-specific questions. Related service-specific or product-specific questions can also comprise a service checkout object. Questions that are not common among providers to a product or service are referred to as provider-specific questions. Related provider-specific questions can also comprise a service checkout object.

Figure 1 shows a system suitable for implementing various embodiments of the present invention. One or more client systems **102A-102D** communicate with one or more server systems **103A-103C** for the purposes of exchanging information and performing transactions. These systems **102, 103** communicate using a communication protocol such as TCP/IP over network **101**. Server **103** may be, for example, an HTTP server that is conFigured to perform transactions. These servers **103** may accept and store information received from a user **102**. In particular, a user **102** may provide and receive, respectively,

input/output **104** through an interface of a client system **102**. The information is transferred over network **101** and stored at one or more servers **103** using one or more communication protocols, such as TCP/IP and one or more transfer protocols such as HTTP. Other protocols are available as known to those of skill in the art.

The communication network **101** may be an ETHERNET network, Fast ETHERNET or other type of local or wide area network (LAN or WAN), a point-to-point network provided by telephone services, or other type of communication network or combination of networks thereof as known to those of skill in the art. Information consumers and providers, also referred to in the art as client and server systems **102, 103**, respectively, communicate through the network **101** to exchange information.

Computer systems **102, 103** may be general purpose computer systems **201** such as that shown in Figure 2. The computer system **201** may include a processor **202** connected to one or more storage devices **203**, such as a disk drive, through a communication device such as bus **207**. The computer system **201** also includes one or more output devices **204**, such as a monitor or graphic display or a printing device, and one or more input devices **207**, such as a keyboard, mouse or other device. The computer system **201** typically includes a memory **205** for storing programs and data during operation of the computer system **201**. In addition, the computer system **201** may contain one or more communication devices **206** that connects the computer system **201** to a communication network **101**.

Computer system **201** may be a general purpose computer system that is programmable using a high level computer programming language. The computer system **201** may also be implemented using specially programmed, special purpose hardware. In computer system **201**, the processor **202** is typically a commercially available processor, such as the PENTIUM, PENTIUM II, PENTIUM III, or StrongARM microprocessor from the Intel Corporation, PowerPC microprocessor, SPARC processor available from Sun Microsystems, or 68000 series microprocessor available from Motorola. Many other processors are available as known to those of skill in the art. Such a processor **202** usually executes an operating system which may be, for example, DOS, WINDOWS 95, WINDOWS NT, WINDOWS 2000, or WinCE available from the Microsoft Corporation, MAC OS SYSTEM 7 available from Apple Computer, SOLARIS available from Sun Microsystems, NetWare available from Novell Incorporated, PalmOS available from the 3COM corporation, or Linux or other UNIX-based operating systems available from various sources. Many other operating systems may be used as known to those of skill in the art.

It should be understood that the invention is not limited to a particular computer system platform, processor, operating system, or network. Also, it should be apparent to those skilled in the art that the present invention is not limited to a specific programming language or computer system and that other appropriate programming languages and other appropriate computer systems could also be used.

Figure 3 shows a block diagram of a system for managing information among a plurality of provider systems **103** according to one embodiment of the invention. Intermediate server **301**, upon which various aspects of the invention may be implemented, may be, for example, a general purpose computer system as described above with reference to Figure 2. Server **301**, which may reside at a United States Postal Office, collects information provided by one or more clients **102** and provides this information to one or more provider systems **103**. Information received from clients **102** is stored in database **307** and is provided to server **103**, depending on the type of transaction. Secure Socket Layer Encryption is provided to protect information collected by server **301**.

Server **301** includes an information manager **303** to perform management of information received from clients **102**. Manager **303** may comprise one or more executable programs **306** or scripts **305** written in one or more programming languages. These programs and scripts are operable to handle requests, receive and process information, generate interfaces, and to store data in database **307**. Server interface **304** is operable to broker information to one or more provider systems **103**, and may be programmed in one or more programming languages, such as Java. Server interface **304** is also operable to perform one or more transactions on behalf of its users **102**. Transactions may be performed electronically, such as by email, XML, or Electronic Data Interchange (EDI), or may be converted to alternative forms, such as fax and forms that are hand-processed. Other methods for transferring information and supporting transactions may also be used as known to those of skill in the art.

According to one embodiment of the invention, server **301** distributes information related to a single event to multiple providers **103** of goods and/or services. This single event may be composed of many smaller transactions, of which, multiple provider systems **103** must be accessed.

For example, the event may be an event such as a wedding, and the server **301** may maintain information related to weddings. The server **301** could allow a user **102** to perform

one or more transactions with providers **103** of goods and services associated with weddings, and perform other wedding-related functions.

According to one aspect, server **301** maintains a mapping of data fields of provider systems **103** to a common field stored in database **307**. Database **307** may be, for example, a relational database system such as Oracle, Access, or another database that is executed on server **301** or anther system. Server **301** collects information using standard input interfaces that are common to one or more providers **103**.

Figure 4 illustrates a block diagram of steps taken to set up a system and method for sharing information among provider systems. Step **402** involves assembling a list of products and services. These products and services can include, for example, services such as internet service, cable television, and long-distance telephone, and products such as packing supplies and maps. However, it is to be appreciated that this is not an exhaustive list of products and services that may be assembled. Almost any product and/or service may be assembled in step **402**.

After a list of products and services has been assembled, a list of providers that provide a related product or service will be assembled in step **404**. For example, a list of providers that provide the service long-distance telephone may include A T & T, Sprint, and MCI, among others.

Next, in step **406**, a list of checkout questions from each of the providers that provide a related product or service will be assembled. Checkout questions from Sprint, for example, may include questions such as "Title," "First Name," "Last Name," "Address," "City," "State," "Zip Code," while checkout questions from MCI may only include questions such as "First Name," "Last Name," "Address," "City," "State," and "Zip Code."

After a list of checkout questions has been compiled from all of the providers, unique checkout questions will be identified in step **407**. Related checkout questions will become a self-contained object, hereinafter referred to as a checkout object. Related is defined to be two or more checkout questions with similar characteristics. For example, the object "name" could comprise the two checkout questions "First Name" and Last Name." Furthermore, once a checkout object is created, it will not be duplicated with the same checkout questions for another provider. In addition, it is an advantage that each provider that asks the same checkout questions will use the same checkout object. Additionally, if an object contains five related checkout questions, but a specific provider wishes to only have three of the five

checkout questions displayed, there are parameters written into the code that will allow this functionality.

Continuing with the above example regarding long-distance telephone service, the checkout questions "Title," "First Name," "Last Name," "Address," "City," "State," and "Zip Code" may likely be grouped into two objects. The first object may be called the "name" object. In this example, the "name" object would include the question fields "Title," "First Name" and "Last Name." The second object may be called the "address" object and may include the question fields "Address," "City," "State," and "Zip Code." These two objects would be created in step **407**. An object may comprise as few as one or as many checkout questions as desired.

After the checkout objects are created, the checkout objects will be compared to determine those checkout objects that are common among the providers that provide a related or like product or service in step **408**.

In the next step **410A**, checkout objects that are common among the providers that provide a related product or service will be assigned to that product or service. A checkout object is common among providers if the checkout object comprises at least one checkout question from each provider of a product or service. In addition, in step **410B**, checkout objects that are not common among the providers that provide a related product or service will be assigned to the provider who provided the checkout questions associated with that checkout object. A checkout object is not common among providers if the checkout object does not comprise at least one checkout question from each provider of a product or service.

For example, in one embodiment a checkout object "License" may include the fields "State," "Number," and "Expiration Date." However, if only one out of five providers in a service requested information from a user with regard to the checkout object "License," this checkout object could be considered as not common. The number of providers required to ask a checkout question, related to a checkout object, in order for that checkout object to be considered "common" can vary.

Some checkout objects may be optional. In addition, each provider, within a service, can customize some or all checkout objects to meet their needs. Any questions can be asked in any sequence and in any format, color, font, etc.

Next, the objects are then assembled into a checkout process **412** that comprises the unique checkout objects that were common among all of the providers (from step **410A**) and the checkout objects that were unique to one or more providers, and that were chosen by the

one or more providers (step **410B**). For example, the checkout process may include four common checkout objects, each of which is different, from step **410A** and three provider checkout objects, again each of which is different, from step **410B**. However, there may be multiple instances of the three provider checkout objects. In other words, there may be four total provider checkout objects, of which two are the same. The two checkout objects that are the same would be considered to be two instances of a checkout object. Furthermore, the checkout process may include the steps of determining which objects will be placed onto what page and in what sequence, among others.

Next, in step **414**, a users input will be accepted in response to a checkout object and its associated checkout question. In other words, a user will reply online to a set of questions.

In step **416**, a complete set of user responses to checkout questions that are unique to a provider, will be distributed to that provider.

Because common input interfaces are provided, great expense associated with developing and testing customer interfaces is reduced. Also, because information is collected in a reduced number of interfaces, data entry for the user **102** is decreased. Further, because information, products, and services associated with a single event are obtained through a single interface (and server site), the user **102** does not have to visit multiple sites to obtain such information, products, and services.

In addition, it is an advantage that questions posed to a user **102** through one or more interfaces are operated on as a group. A key data field of the group may be designated that may be used to manipulate its associated group data. For instance, to reduce the amount of time required to re-enter user **102** address information, system **301** may store a user's address in database **307** and present to the user **102**, in an interface, a link to the group of data. By selecting this link, the group of information may be, for example, populated to fields of an ordering screen of a provider **103**, or be automatically selected as information that supports a transaction with one or more providers **103**.

Figure 5 shows a number of question groups or objects **501, 505, 511** that may be presented to a user **102** in one or more interfaces. For example, object A (item **501**) may include questions Q1-Q3 (items **502-504**). These questions may be grouped as a set and related to a user **102** by a key field which may be one or more of question answers associated with the questions posed. For example, considering object B (item **505**) that includes a number of question fields Q5-Q12 (items **506-510**) related to address information, answers to the questions Q5-Q12 may be displayed to the user **102** as a link (items **521-524**) to the group

of information stored in database **307**. Thus, for example, if the user **102** interface prompts for the use of an address, the user **102** may select the link identifying the data set, and that information may be entered automatically in the question fields. Any of the above disclosed objects may contain service-specific questions, provider level questions, marketing level questions, or any combination thereof. It is to be appreciated that modifying the contents or questions imposed to a user **102** at the object level is within ordinary skill of one in the art.

Server **301** gathers responses to the questions and provides these in turn to one or more provider systems **103**, as necessary. In particular, a data set **514** provided to one or more server systems **103** may include only the subset of information necessary to complete the transaction. For example, set **514** includes responses R1, R2, R5, R10, R11, and R12 (items **515-520**, respectively) to questions Q1, Q2, Q5, Q10, Q11, and Q12. In this manner, the number of interfaces necessary for collecting data are standardized and reduced in number.

Furthermore, information contained within each field (a field is either a single question or an answer), or a part of a field, can be further assigned individual attributes. Attributes contain information regarding how each field will be displayed. For example, referring to Figure 6, an object **602** may include the fields **604 – 612**. Each field can comprise one or more of its own attributes as shown by arrows **624**, **626**, **628**, and **630**. In this example, field 1 **604** is assigned attribute 2 **616**, field 2 **606** is assigned attribute 1 **614**, and field 3 **608** is assigned attributes 2 **616** and 3 **630**. It is to be appreciated that fields can be assigned any number of attributes, and that attributes can be assigned more than one field. Attributes can include, but are not limited to, color, font, font size, bold, italics, underline, drop-down menu, radio buttons, and text. It is to be appreciated that modifying an attribute at the field or object level is within ordinary skill of one in the art

According to one aspect of the invention, a server **301** is provided that functions as a guide to movers. This guide assists users **102** in various aspects related to moving. In one aspect, the system **301** organizes multiple providers **103** related to a single event, such as moving. These providers **103** in turn may provide services and/or products.

For example, Figure 7 shows an example index or home page **701** for the to-be-released world wide web site MoversGuide.com, developed and operated by the assignee herein. The user **102** will be posed with many options or links **702** under the headings Plan **704**, Move **706**, and Settle **708**.

The first heading, "Plan" **704**, contains links **702** to various sites that will assist a user **102** in preparation for an upcoming move. Links **702** under the heading "Plan" may include "Notifying the United States Postal Service about change of address," "Find local government resources," "Notifying friends and family about change of address," "Obtaining and maintaining a moving checklist and timeline," "Obtaining maps and driving directions," "Purchasing moving supplies," "Rent storage space," "Obtaining community information," "Obtaining tips that deal with moving with children," "Obtaining tips that deal with practical packing," and "Obtaining important phone numbers" such as police, fire, etc. However, it is to be appreciated that the links under the heading "Plan" are not limited to the above products and services, and that many more products and services can be added that are within ordinary skill of one in the art.

The second heading entitled "Move" **706** contains links **702** to sites that will be important for a user **102** to access at or close to the time of moving. Links **702** under the heading "Move" may include "Renting a truck," "Connecting and disconnecting cable," "Connecting and disconnecting internet service provider," "Connecting and disconnecting local phone service," "Connecting and disconnecting long distance phone service," "Connecting and disconnecting wireless phone service," "Canceling newspaper subscription," "Obtaining tips that deal with moving with pets," and "Connecting and disconnecting utilities" such as gas, electricity, etc. However, it is to be appreciated that the links under the heading "Move" are not limited to the above products and services, and that many more products and services can be added that are within ordinary skill of one in the art.

The third heading, "Settle" **708**, contains links **702** to sites that will assist a user **102** in settling at the users new location. Links **702** under the heading "Settle" may include "Purchasing furniture," "Subscribing to newspaper subscription," "Obtaining local maps," "Obtaining pet service," and "Obtaining banking service." However, it is to be appreciated that the links under the heading "Settle" are not limited to the above products and services, and that many more products and services can be added that are within ordinary skill of one in the art.

It should be clear that many of the links **702** under the headings "Plan," "Move," and "Settle" are further examples of products and services that may be assembled as discussed before in step **402**, Figure 4.

A detailed example will now be explored. Referring back to Figure 7, if the user **102** were to select the option "Change address with USPS" **710**, a new page **801** will appear such

as the page disclosed in Figure 8. Figure 8 shows several examples of service specific questions. Since there is only one United States Postal Service, each of the questions asked would be considered to be service specific. An example with multiple providers will be further explored below. A user **102** will answer each of the required questions **802**, such as those illustrated in Figure 8. After the user **102** completes the questions **802** and selects the "Continue" button **804**, a validation test will be performed on the data to ensure that the user **102** has not entered erroneous data or that the user **102** has not left an answer to a required question **802** blank.

Typical information provided by a user **102** to a provider **103** that may be stored by server **301** includes identification information such as name, title, etc., address information including old address and new address, credit card information, email addresses, shipping information, employment information, financial information, and contact information. However, it is to be appreciated that the type of information requested from a user is not limited to the above, and that additional user information can be added that is within ordinary skill of one in the art.

Server **301** may save information, or specifically not save or share information that should not be shared with other providers **103**, such as credit card information. This information may be saved based on user **102** preferences, for example.

After the data has successfully passed the validation test, a new page **901** will appear such as the page disclosed in Figure 9. Further service specific questions are posed to the user **102** as shown in Figure 9. Figure 9 also illustrates an example of an object. In this example, the object could be termed the "address" object **906**. The object "address" comprises the questions "OLD Street Address," "City," "State," "ZIP Code," "NEW Street Address," among others. As discussed before, the provider, United States Postal Service in this example, selects the questions posed to the user **102**. Questions with like characteristics are then grouped into objects or question groups. The provider can then further select the field attributes within each object or question group. There are many types of attributes that can be applied to a single field or a whole object, and are illustrated in Figure 9. For example, the drop-down menu **908** under the question "What type of address is your NEW ADDRESS?", the "yes/no" radio buttons **910** under the question "Is your NEW ADDRESS: In Puerto Rico?", and the bolding **912** under the state field are just a few among many types of attributes that can be selected.

After the data has successfully passed the validation test again, a new page **1001** will appear such as the page disclosed in Figure 10 that will offer the user **102** a chance to verify the data entered for accuracy. After the user selects the "Continuation" button **1004**, the transaction will be complete. It is to be appreciated that the various pages, such as those illustrated in Figures 8, 9, and 10, can be modified extensively using a programming language such as Java, and/or a web based language such as HTML or XML. For example, pages could be added, deleted, or rearranged, information contained within objects could be added or deleted, attributes could be modified, and many other changes could be made that are known to those of skill in the art.

Turning back to Figure 5, in another example based on MoversGuide.com, a user **102** could select the link "Get a Moving Checklist" **712** under the heading "Plan" **704**. A new page **1101** will appear such as the page disclosed in Figure 11. This page **1101** will allow a user **102** to create a checklist of things to do before, during, and after a move. In yet another example, Figure 12 discloses a page **1201** containing community information. This page can also be linked to from the home page **701** as disclosed in Figure 7.

Turning once again back to Figure 7, in yet another example based on MoversGuide.com, a user **102** could select the link "Order Cable" **714** under the heading "Move" **706**. A new page **1301** will appear such as the page disclosed in Figure 13. In this example a user **102** has chosen to obtain cable service. The user **102** is prompted with a service specific question **1302** regarding cable. After the user **102** selects the "Continuation" button **1304**, a new page **1401** will appear such as the page disclosed in Figure 14. Again, The user **102** is prompted with a service specific question **1402** regarding cable. After the user **102** selects the "Continuation" button **1404** and the data passes the validation test, a new page **1501** will appear such as the page disclosed in Figure 15.

Figure 15 illustrates an example of provider-specific questions **1506, 1508** posed upon a user **102**. As discussed before, provider-specific questions are customized to meet the needs of each provider **103**. Here, for example, both Provider 1 **1510** and Provider 2 **1512** ask the same questions, but that is not always the case. After the user **102** selects Provider 1 **1510** or Provider 2 **1512** or both (the user can select both, in this case the next page will illustrate information regarding both providers) and then further selects the "Continuation" button **1504**, a new page **1601** will appear such as the page disclosed in Figure 16. Figure 16 illustrates four provider level options **1602** from which a user **102** can select. Here again, a user **102**, will select an option **1602** that will result in the appearance of another page. This

process will continue until the user **102** completes the transaction or aborts the process. Again, it is to be appreciated that the various pages can be modified extensively. For example, pages could be added, deleted, or rearranged, information contained within objects could be added or deleted, attributes could be modified, and many other changes could be made that is within ordinary skill of one in the art

It is an advantage of a System and Method for Sharing Information among Provider Systems of the invention that a user will only have to address one set of common questions for multiple providers due to the object-oriented approach. The high degree of flexibility is another advantage, in particular the flexibility in assigning attributes at the object and field level. It is another advantage that all user information and provider information is stored in a database. It is another advantage that the server of which the database is housed in has Secure Socket Layer Encryption to protect the information.

Additional detailed information regarding various aspects of the invention appear in Appendices I and II, which are incorporated herein in their entirety and form an integral part of this specification. Included in Appendix I is a detailed example of a newspaper subscription service. Also, included in Appendix I are printouts of pages a user would encounter as the user navigates through a web site designed according to one embodiment of the present invention. Specifically shown are the pages the user would encounter upon considering ordering a newspaper subscription from among the multiple service providers which provide newspaper service. It should be appreciated that the user need not complete any question more than once even if ordering newspaper service from more than one provider. Included in Appendix II is a logical data model of MoversGuide.com, the web site produced by the assignee herein according to one aspect of the present invention.

While several embodiments of a system and method for sharing information among provider systems of the invention have been described and illustrated herein, those of ordinary skill in the art may readily envision a variety of other structures for performing the functions and/or obtaining the results or advantages described herein, and each of such variations or modifications is deemed to be within the scope of the present invention. In addition, those skilled in the art may readily appreciate that all parameters and configurations described herein are meant to be exemplary and that actual parameters and configurations will depend upon specific applications for which the teachings of the present invention are used. Those skilled in the art may also recognize, or be able to ascertain using no more than routine experimentation, equivalents to the specific embodiments of the invention described

herein. It is, therefore, to be understood that the foregoing embodiments are presented by way of example only and that, within the scope of the appended claims and equivalents thereto, the invention may be practiced otherwise than as specifically described. The present invention is directed to each individual feature, structure, combination of structures, system, and/or method described herein. In addition, any combination of two or more such features, structures, combination of structures, systems, and/or methods, provided that such features, systems, structures, combination of structures, and/or methods are not mutually inconsistent, is included within the scope of the present invention. In the claims, all transitional phrases or phrases of inclusion, such as "comprising," "including," "carrying," "having," "containing," and the like are to be understood to be open-ended, i.e. to mean "including but not limited to."

What is claimed is: